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SAP/BLAKELY 1279 OAKMEAD PARKWAY SUNNYVALE, CA 94085-4040			EXAMINER DAO, THUY CHAN	
			ART UNIT 2192	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/749,617

Applicant(s)

NIKOLOV, NIKOLAI G.

Examiner

Thuy Dao

Art Unit

2192

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11, 13-28, 30-43 is/are pending in the application.
- 4a) Of the above claim(s) 12 and 29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-28, 30-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>08/23/07</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This action is responsive to the amendment filed on August 1, 2007 and the supplemental amendments filed on August 23, 2007.
2. Claims 1-11, 13-28, and 30-43 have been examined.

### **Response to Amendments**

3. Per Applicant's request, claims 1-6, 8-11, 13-14, 17-28, 30-31, and 34 have been amended; claims 35-43 have been added; and claims 12 and 29 have been canceled.

### **Information Disclosure Statement**

4. The Office acknowledges receipt of the Information Disclosure Statement filed on August 23, 2007. It has been placed in the application file and the information referred to therein has been considered by the examiner.

### **Response to Arguments**

5. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action
6. The examiner notes that in the voicemail left on July 27, 2007, the examiner did not state that "...*new claim 35 does not require restriction*" as asserted by the Applicant (Remarks, page 14, paragraph 3). The examiner only reminded the Applicant about the potential of restriction requirement when adding new claims including first time presented limitations.

After considering the official amendments filed August 1 and 23, 2007, and per Applicant's statements "As seen in the analysis provided just above, claim 35 merely recites structure capable of performing the method of claims 1 and 18" (emphasis added), the examiner confirms that the independent claim 35 (marked as "Previously Presented" in the supplement amendment filed August 23, 2007) does not need to be restricted from the present application.

### Claim Objection

7. Claims 1, 13, 17-18, 30, and 34 are objected to because of minor informalities. The term "class" should be changed to - -classfile- - for consistency.

Appropriate correction is required.

### Claim Rejections – 35 USC §112, 2nd paragraph

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 35-43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

#### Claim 35:

The term "*said first program code located proximate to said first method's entry point*" (lines 7-8) and "*said second program code located proximate to said third method's entry point*" (lines 18-19) are relative terms which render the claim indefinite. The terms "*located proximate to ... method's entry point*" (emphasis added) is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Wherein a method could have only few or too many code lines (e.g., instant application, FIG. 1C, method GetMax has only 5 lines; reference Avakian. FIG. 7, method 700 has 28 lines), the claim and the specification do not provide a standard for ascertaining the requisite degree of "*located proximate to ... method's entry point*", and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention (emphasis added).

**Claims 36-43:**

Claims 36-43 are also rejected based on virtue of their dependencies on the rejected base claim 35.

For the purpose of a compact prosecution, in claim 35, the phrases "*said first program code located proximate to said first method's entry point*" (lines 7-8) and "*said second program code located proximate to said third method's entry point*" (lines 18-19) have been omitted and are not considered in this Office action.

**Claim Rejections – 35 USC § 101**

10. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

11. Claims 35-43 are rejected because the claimed invention is directed to non-statutory subject matter: "*A computing system...*", which may comprise only software components such as "*a first classfile, a dispatcher, a plug-in, a handler, a second classfile ...*".

They amount to Functional Descriptive Material: "Data Structures" representing descriptive material per se or "Computer Programs" representing computer listings per se.

Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory.

Similarly, computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035. Accordingly, it is important to distinguish claims that define descriptive material per se from claims that define statutory inventions. See MPEP 2106.

Under the principles of compact prosecution, claims 35-43 have been examined as the Examiner anticipates the claims will be amended to obviate these 35 USC § 101 issues. For example (proposal only), - -A computer system, comprising: a processor; ... - as disclosed in the specification, [0163].

### **Claim Rejections – 35 USC § 102**

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claims 35-41 and 43 are rejected under 35 U.S.C. 102(e) as being unpatentable over Avakian (art of record, US Patent Publication No. 2005/0039171 A1).

**Claim 35:**

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Avakian discloses a *computing system, comprising:*

*a first classfile (e.g., FIG. 3, Class C', [0060-0064]);*

*a dispatcher, said dispatcher having a dictionary (e.g., FIG. 3, HookControl 34, Control Object 29, ExecCallback 36, Plug-In Instruments 27A-B, [0063-0072]),*

*a first object manufactured from said classfile, said first object having a first method, said first method instrumented with first program code to invoke a second method executed by said dispatcher (e.g., FIG. 7, [0096-0097]),*

*said first program code written to identify said classfile and said first method to said dispatcher as part of said invoking (e.g., [0095], [0097-0098]);*

*a plug-in, said plug-in having a handler, said handler having program code to report and/or record information about a method that invokes said dispatcher, said dispatcher's dictionary correlating said first method and said classfile with said plug-in (e.g., FIG. 2-3, [0054-0059], [0064-0066]);*

*a second classfile (e.g., FIG. 3, a second classfile with another eBusiness transaction, buying another/other item(s) in a shopping cart, [0046], [0095], [0010-0012]);*

*a second object manufactured from said second classfile, said second object having a third method, said third method instrumented with second program code to invoke said second method executed by said dispatcher (e.g., [0060-0064]; [0096-0097]),*

*said second program code written to identify said second classfile and said third method to said dispatcher as part of said third method's invoking of said dispatcher (e.g., [0095], [0097-0098], [0110-011]),*

*said dispatcher's dictionary correlating said third method and said second classfile with said plug-in (e.g., [0060-0073]).*

**Claim 36:**

The rejection of claim 35 is incorporated. Avakian also discloses *said invocation of said second method by said first program code also includes identifying said first method's arguments* (e.g., FIG. 10, [0110-0113]).

**Claim 37:**

The rejection of claim 36 is incorporated. Avakian also discloses *said invocation of said second method by said second program code also includes identifying said third method's arguments* (e.g., [0065-0066], [0110-0111]).

**Claim 38:**

The rejection of claim 37 is incorporated. Avakian also discloses *said first and second objects are Java objects* (e.g., FIG. 1, [0045-0048]).

**Claim 39:**

The rejection of claim 35 is incorporated. Avakian also discloses *said first and second objects are Java objects* (e.g., FIG. 1, [0045-0048]).

**Claim 40:**

The rejection of claim 35 is incorporated. Avakian also discloses *said first method is a constructor* (e.g., [0073]).

**Claim 41:**

The rejection of claim 35 is incorporated. Avakian also discloses *said information includes a time of entry or exit of said method* (e.g., [0046], [0095], [0010-0012]).

**Claim 43:**

The rejection of claim 35 is incorporated. Avakian also discloses *said information includes a value for an argument of said method* (e.g., [0063-0066]).



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14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 1-3, 5-11, 13-20, and 22-28, and 30-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Avakian in view of Admitted Prior Art (art made of record, hereinafter "APA").

**Claim 1:**

Avakian discloses *a method, comprising: in an object oriented run-time environment, after a classfile has been loaded (e.g., FIG. 3, class C' has been instrumented and loaded by Class Loader 30, [0060], [0064]):*

*a) invoking a second method from a first method (e.g., FIG. 7, second method as item 702, first method as item 700, [0096-0097]),*

*said first method belonging to said classfile (e.g., FIG. 7, said first method "public TradeResult buy(String string, int i)" belongs to said class, which has been instrumented and loaded at class-load time, [0095], [0097-0098]),*

*said invoking comprising providing an identification of said first method and said classfile (e.g., FIG. 7, second method 702 comprising an identification of said first method and said class as illustrated in FIG. 10, items 1002 and 1004, [0113] and FIG. 9, items 900 and 920, [0110-0111]);*

*b) identifying a plug-in module for said first method based upon said identification (e.g., FIG. 2-3, Plug-In Instrument 27A-B, [0054], [0059], [0064-0066]; FIG. 7, line 8, second method 702 returns corresponding identification to "object"),*

*said plug-in module containing a handler method (e.g., FIG. 7, lines 9-13, if (object != null) then executing handler methods);*

*c) executing said handler method to report and/or record information about said first method (e.g., page 4, [0065-0066]); and*

*d) executing said first method from a point beyond where said second method was invoked (e.g., FIG. 7, after executing second method 702 at line 8, executing 700→714→701, which is the first method belonging to said class C', [0095-0098]).*

*e) a third method (e.g., [0046], [0095], [0010-0011], eBusiness transactions in on-line shopping, buying another/other item(s) in a shopping cart);*

*f) invoking a second method from said third method (e.g., FIG. 7, second method as item 702, third method as item 700, [0096-0097]); FIG. 7, said third method “**public TradeResult buy(String string2, int i2)**” belongs to said class, which has been instrumented and loaded at class-load time, [0095], [0097-0098]),*

*said invoking comprising providing an identification of said third method and a second classfile that said third method is a part of (e.g., FIG. 7, second method 702 comprising an identification of said first method and said class as illustrated in FIG. 10, items 1002 and 1004, [0113] and FIG. 9, items 900 and 920, [0110-0111]);*

*g) identifying said plug-in module for said third method based upon said third method and second classfile identification (e.g., FIG. 2-3, Plug-In Instrument 27A-B, [0054], [0059], [0064-0066]; FIG. 7, line 8, second method 702 returns corresponding identification to “**object**”); FIG. 7, lines 9-13, if (**object != null**) then executing handler methods);*

*h) executing said handler method to report and/or record information about said third method (e.g., page 4, [0065-0066]); and*

*i) executing a portion of said third method from a point beyond where said second method was invoked from said third method (e.g., FIG. 7, after executing second method 702 at line 8, executing 700→714→701, which is the first method belonging to said class, [0095-0098]),*

*wherein said classfile and said second classfile were both modified, prior to their respectively being said loaded, with additional bytecode instructions that perform a) and f) above (e.g., FIG. 2, Bytecode Instrumentation Controller BIC, [0054-0059]; FIG. 3, Bytecode Instrumentation Program BIP, [0060-0072]).*

Avakian does not explicitly disclose *flowing from said first method to a third method; said second classfile having been loaded at least by the completion of said flowing from said first method to said third method.*

However, in an analogous art, APA further discloses:

*after a classfile has been loaded (e.g., [0005-0006]):*

*invoking a second method from a first method; said first method belonging to said classfile (e.g., FIG. 1D, [0012-0014], first method as method\_1 205 belonging to classfile object\_1 201);*

*flowing from said first method to a third method (e.g., a third method as either method\_2 206, method\_3 207, or method\_4 208, [0010-0012]);*

*a second classfile that said third method is a part of (e.g., still FIG. 1d, each third method is a part of a corresponding classfile, [0007-0009]);*

*said second classfile having been loaded at least by the completion of said flowing from said first method to said third method (e.g., [0011], [0014-0018]).*

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine APA's teaching into Vakavian's teaching. One would have been motivated to do so to apply prior art runtime flow in an online sale environment as suggested by APA (e.g., [0014], [0005-0006]) as well as in a eBusiness transactions such as on-line shopping including shopping cart as suggested by Avakian (e.g., [0010-0012], [0046]).

#### **Claim 2:**

The rejection of claim 1 is incorporated. Avakian also discloses *said executing of said handler method at c) above causes an entry time for said first method to be recorded (e.g., page 11, [0144]).*

#### **Claim 3:**

The rejection of claim 1 is incorporated. Avakian also discloses *said executing of said handler method at c) above causes an exit time for said first method to be recorded (e.g., page 11, [0145]).*

**Claim 5:**

The rejection of claim 1 is incorporated. Avakian also discloses *said executing of said handler method at c) above causes an input parameter value of said first method to be recorded* (e.g., page 4, [0065]).

**Claim 6:**

The rejection of claim 1 is incorporated. Avakian also discloses *said executing of said handler method at c) above causes a returned value of said first method to be recorded* (e.g., page 4, [0066]).

**Claim 7:**

The rejection of claim 1 is incorporated. Avakian also discloses *said first method is a constructor* (e.g., page 5, [0073]).

**Claim 8:**

The rejection of claim 1 is incorporated. Avakian also discloses *creating, prior to said invoking at a) above, an object having an input parameter value of said first method* (e.g., page 4, [0065]).

**Claim 9:**

The rejection of claim 1 is incorporated. Avakian also discloses *said invoking at a) above further comprises providing an input parameter value of said first method* (e.g., page 4, [0064]).

**Claim 10:**

The rejection of claim 1 is incorporated. Avakian also discloses *said invoking at a) above further comprises identifying where said first method's instructions can be found in memory* (e.g., page 4, [0065]).

**Claim 11:**

The rejection of claim 1 is incorporated. Avakian also discloses *after said executing said first method from a point beyond where said second method was invoked but before said flowing to said third method at e) above,*

*invoking a third method from said first method because said first method is about to reach an exit point, said second method having been invoked from said first method because an entry point of said first method had just been reached; re-identifying said plug-in module for said first method as a consequence of said invoking a third method (e.g., page 3, [0051]; page 4, [0065]);*

*re-executing said handler method to report and/or record information about said first method; and executing a remaining portion of said first method through said exit point (e.g., page 5, [0066]).*

**Claim 13:**

The rejection of claim 12 is incorporated. Avakian also discloses *identifying a second plug-in module for said third method based upon said third method and second class identification, said second plug-in module containing a second handler method (e.g., page 3, [0051]).*

**Claim 14:**

The rejection of claim 13 is incorporated. Avakian also discloses *executing said second handler method to report and/or record different information about said third method than what said first handler method reports and/or records about said third method (e.g., page 4, [0065]).*

**Claim 15:**

The rejection of claim 14 is incorporated. Avakian also discloses *a first object is called to execute said first method and a second object is called to execute said third method (e.g., page 5, [0066]).*

**Claim 16:**

The rejection of claim 15 is incorporated. Avakian also discloses *said object oriented run-time environment is a Java object oriented environment* (e.g., page 3, [0051]).

**Claim 17:**

The rejection of claim 1 is incorporated. Avakian also discloses *said invoking at a) above further comprises providing said first method's signature, said first method's signature comprising: said identification of said first method; said identification of said class that said first method is a part of; and said first method's arguments* (e.g., page 4, [0064]).

**Claims 18-20, 22-28, and 30-34:**

Claims 18-20, 22-28, and 30-34 recite the same limitations as those of claims 1-3, 5-11, and 13-17, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the reference teaches all of the limitations of the above claims, it also teaches all of the limitations of claims 18-20, 22-28, and 30-34.

16. Claims 4 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Avakian, APA, and further in view of Hibbeler (art of record, US Patent No. 7,093,234 B2).

**Claim 4:**

The rejection of claim 1 is incorporated. Neither Avakian nor APA explicitly disclose *said executing of said handler method at c) above causes a counter maintained for said first method to be incremented*.

However, in an analogous art, Hibbeler further discloses *said executing of said handler method causes a counter maintained for said first method to be incremented* (e.g., col.8: 6-10).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the teaching of Hibbeler into that of Avakian and

APA. One would have been motivated to do so to profile suspected hot spots or bottlenecks in the target application as suggested by Hibbeler (e.g., col.3: 11-35).

**Claim 21:**

The rejection of claim 18 is incorporated. Claim 21 recites the same limitations as those of claim 4, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the reference teaches all of the limitations of the above claim, it also teaches all of the limitations of claim 21.

17. Claims 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Avakian in view of Hibbeler.

**Claim 42:**

The rejection of claim 35 is incorporated. Avakian does not explicitly disclose *said executing of said handler method causes a counter maintained for said first method to be incremented.*

However, in an analogous art, Hibbeler further discloses *said executing of said handler method causes a counter maintained for said first method to be incremented* (e.g., col.8: 6-10).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the teaching of Hibbeler into that of Avakian. One would have been motivated to do so to profile suspected hot spots or bottlenecks in the target application as suggested by Hibbeler (e.g., col.3: 11-35).

**Conclusion**

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication should be directed to examiner Thuy Dao (Twee), whose telephone is (571) 272 8570. The examiner can normally be reached on every Tuesday, Thursday, and Friday from 6:00AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam, can be reached at (571) 272 3695.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273 8300.

Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is (571) 272 2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

T. Dao



**TUAN DAM**  
**SUPERVISORY PATENT EXAMINER**